



## PATENT ABSTRACTS OF JAPAN

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**B23K 26/00****B23K 9/04****F01L 3/02****F02F 1/42**(21)Application number: **06081664**(22)Date of filing: **20.04.94**(71)Applicant: **NISSAN MOTOR CO LTD**(72)Inventor: **MATSUYAMA HIDENOBU  
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SHIBATA KIMIHIRO****(54)LASER BEAM BUILDING-UP METHOD****(57)Abstract:**

**PURPOSE:** To execute defectless build-up welding by previously providing a part to be built-up with a padding part adjacent to the part to be built-up and removing the padding part after build-up welding.

**CONSTITUTION:** A cylinder head 1 for automobiles is made of an aluminum alloy and has a valve seat forming part 2 of the part to be built-up constituting a circulating form and is previously provided with the padding part 3 in an overhanging state over the entire circumference on the bore side thereof. Building-up is started from the padding part 3 by irradiating the part with a laser beam L while alloy powder 4 is supplied from a pipe 6 until the build-up is formed over the entire circumference of the valve seat forming part 2. The padding part 3 is removed by cutting, etc., to form the valve seat S by the build-up 5 after the building-up is executed. Simultaneously, the build-up shape, build-up welding conditions, etc., are limited to specific ranges. As a result, the

build-up start part where a defect is liable to be caused by a deviation in the timing of the start of the metal powder supply for laser building-up and the irradiation start of the laser beam is removed together with the padding part 3 and the defectless build-up is obtd.

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